STEBNICKA, F.

New methods of experimenting with forest products.   p. 43

SYLWAN (Wydzial Nauk Rolniczych i Lesnych Polskiej Akademii Nauk i Polskie Towarzystwo Lesne) Warszawa, Poland.   Vol. 103, no. 3, Mar 1959

Monthly List of East European Accessions, (EEAI) LC, Vol. 8, no. 9, September 1959. Uncl.

DRUZHININA, Z.I.; ZAVADOVSKAYA, Ye.K.; STEBNITSKAYA, G.V.

Ionic electric conductivity of single crystals in solid solutions
and mechanical mixtures of alkali metal halides. Izv. TPI 95:
217-225 '58.   (MIRA 14:9)
          (Solutions, Solid--Electric porperties)
          (Alkali metal halides--Electric properties)

AID P - 4649

Subject   : USSR/Aeronautics - gyropilot

Card 1/1   Pub. 135 - 15/26

Author   : Stebunov, A. G., Eng.-Lt.

Title   : The use of gyropilot at high altitudes

Periodical   : Vest. vozd. flota, 5,   70-72, My 1956

Abstract   : Description of the maintenance of gyropilot and its use
                 at high altitudes is given. The article is of informative
                 value.

Institution : None

Submitted   : No date

TOLSTYKH, Aleksandra Stepanovna; STEBUNOV, N.S., red.; PONOMAREVA, A.A.,
tekhn.red.

[Organization and establishing work norms in an industrial
enterprise] Organizatsiia i tekhnicheskoe normirovanie truda
na promyshlennom predpriiatii. Moskva, Izd-vo ekon.lit-ry,
1962. 60 p.   (MIRA 15:4)
        (Industrial management)   (Production standards)

KVACHEV, Vladimir Mikhaylovich, agronom-ekonomist; STEBUNOV, N.S.,
     red.; GERASIMOVA, Ye.S., tekhn. red.

     [Reducing the cost of production on collective farms; as
     exemplified by suburban collective farms in Moscow Province]
     Snizhenie sebestoimosti produktsii v kolkhozakh; na primere
     prigorodnykh kolkhozov Podmoskov'ia. Moskva, Ekonomizdat, 1962.
     66 p.   (MIRA 15:9)
           (Moscow Province—Collective farms—Costs)

USPENSKIY, Vasiliy Vasil'yevich; STEBUNOV, N.S., red.; GERASIMOVA,
Ye.S., tekhn. red.

[The cost of building and assembly work] Sebestoimost'
stroitel'no-montazhnykh rabot. Moskva, Ekonomizdat, 1962.
74 p.   (MIRA 15:7)
          (Construction industry--Costs)

SHUKSTAL', Yanina Vladislavovna; STEBUNOV, N.S., red.; GERASIMOVA,
Ye.S., tekhn. red.

[Technical and economic efficiency of electric and diesel trac-
tion in railroad transportation] Tekhniko-ekonomicheskaia ef-
fektivnost' elektricheskoi i teplovoznoi tiagi na zhelezno-
dorozhnom transporte. Moskva, Ekonomizdat, 1962. 79 p.
(MIRA 15:6)

(Electric railroads) (Diesel locomotives)
(Railroads--Cost of operation)

BORISOV, Yevgeniy Filippovich; ZAYTSEV, Rostislav L'vovich;
    STELUNOV, N.S., red.; POHOMAREVA, A.A., tekhn. red.

[Socialist competition and the economics of enterprises]
Sotsialisticheskoe sorevnovanie i ekonomika predpriiatii.
Moskva, Ekonomizdat, 1962. 93 p.   (MIRA 15:10)
    (Socialist competition)   (Industrial management)

TOLPEKIN, Stefan Zakharovich; STEBUNOV, N.S., red.; PONOMAREVA, A.A., tekhn. red.

[Over-all mechanization of agriculture; economic effectiveness] Kompleksnaia mekhanizatsiia sel'skogo khoziaistva; ekonomiche-skaia effektivnost'. Moskva, Ekonomizdat, 1962. 139 p.
(MIRA 16:3)

(Farm mechanization)

PAVLOV, Sergey Maksimovich;.STEBUNOV,_N.S.,_red.; TARASOVA, T.K.,
       mladshiy red.; PONOMAREVA, A.A., tekhn. red.

[The problem of problems; increasing the effectiveness of
capital investments] Vopros voprosov; za povyshenie ef-
fektivnosti kapital'nykh zatrat. Moskva, Ekonomizdat,
1963. 65 p.   (MIRA 16:7)
     (Metallurgical plants--Design and construction)
     (Construction industry--Economic aspects)

MOROZOV, Nikolay Stepanovich; STEBUNOV, N.S., red.; GERASIMOVA, Ye.S.,
tekhn. red.

[Collective farm system is the road of the peasantry toward
communism] Kolkhoznyi stroi - put' krest'ianstva k kom-
munizmu. Moskva, Ekonomizdat, 1963. 70 p.   (MIRA 16:5)
           (Collective farms)

PODKOVYROV, Nikolay Alekseyevich; STEBUNOV, N.S., red.;
    MISHNAYEVSKAYA, G.V., mlad. red.; GERASIMOVA, Ye.S.,
    tekhn. red.

[Improve the establishment of work norms] Sovershenstvo-
vat' normirovanie truda. Moskva, Ekonomizdat, 1963. 79 p.
                                        (MIRA 16:7)
        (Production standards)

OLDAK, Pavel Grigor'yevich; STEBUNOV, N.S., red.; MISHNAYEVSKAYA,
G.V., mlad. red.; GERASIMOVA, Ye.S., tekhn. red.

[Economic problems of raising standard of living] Ekonomi-
cheskie problemy povysheniia urovnia zhizni. Moskva,
Ekonomizdat, 1963. 110 p.   (MIRA 16:12)
        (Cost and standard of living)

SKOVORODA, Konstantin Martynovich; STEBUNOV, N.S., red.;
MISHNAYEVSKAYA, G.V., mlad. red.; PONOMAREVA, A.A.,
tekhn. red.

[Principles of planning the retail of merchandise] Osnovy
planirovaniia roznichnogo tovarooborota. Moskva, Eko-
nomizdat, 1963. 136 p.   (MIRA 17:1)

1. Nachal'nik Upravleniia prodovol'stvennykh tovarov Gosu-
darstvennogo komiteta po torgovle (for Skovoroda).
                          (Retail trade)

KOSHUTA, Aleksandr Aleksandrovich; STEBUNOV, N.S., red.;
    SLUTSKINA, TS.S., mlad. red.

    [Determining prices for the products of machinery
    manufacturing] Opredelenie tsen na produktsiiu mashino-
    stroeniia. Moskva, Ekonomika, 1964. 75 p.
                                    (MIRA 17:11)

MERZHANOV, Grigoriy Sergeyevich; STEBUNOV, N.S., red.; MISHNAYEVSKAYA,
G.V., mlad. red.

[Balance sheet compilation in planning and accounting;
methodological instructions, schedules, and calculations]
Balansovye raschety v planirovanii i uchete; metodicheskie
ukazaniia, skhemy, raschety. Moskva, Ekonomika, 1964. 142 p.
(MIRA 17:10)

FEL'D, Semon Davidovich; STEBUNOV, N.S., red.

[Unified power balance of the national economy; problems
of optimum utilization] Edinyi energeticheskii balans na-
rodnogo khoziaistva: problemy optimizatsii. Moskva, Eko-
nomika, 1964.   311 p.   (MIRA 17:10)

ROZE, Mikhail Grigor'yevich; ROSSINSKIY, Mikhail Borisovich;
        STEBUNOV, N.S., red.; MISHNAYEVSKAYA, G.V., mlad.
        red.

        [The planning and economics of consumer service industries]
        Planirovanie i ekonomika bytovogo obsluzhivaniia nasele-
        niia. Moskva, Ekonomika, 1964. 118 p.   (MIRA 18:2)

DROGICHINSKIY, Nikolay Yemel'yanovich; STEDUNOV, N.S., red.

[Organization of industrial management and planning at
the present-day stage] Organizatsiia upravleniia pro-
myshlennost'iu i planirovaniia na sovremennom etape.
Moskva, Ekonomika, 1965. 150 p.   (MIRA 18:9)

1. Nachal'nik planovo-ekonomicheskogo upravleniya Ukrain-
skogo sovnarkhoza Gosplana Ukr.SSR (for Drogichinskiy).

86048

S/020/60/135/003/034/039

B004/B060

AUTHORS: Vdovenko, V. M., Corresponding Member of the AS USSR, Legin, Ye. K.; Stebunov, O. B.; and Shcharbakov, V. A.

TITLE: Relaxation of Protons in Hydrogen Peroxide Solutions Irradiated With Ultraviolet Light

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 3, pp. 645 - 647

TEXT: The present paper deals with the problem of reducing the relaxation time T_1 of protons in aqueous solutions by the effect of ionizing radiation. As a special case, they report on their measurements of T_1 in H_2O_2, where chain reactions take place under the action of ultraviolet light. Initial 30% H_2O_2 was concentrated at 15 – 20 mm Hg. Tests were conducted in quartz ampoules at room temperature. The radiation source was a ПРК -2 (PRK-2) lamp. Fig.1 shows the ratio between relaxation signal A in irradiated H_2O_2 of varying concentration and signal A_0 in non-irradiated H_2O_2
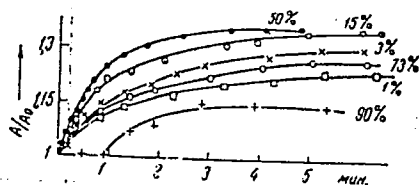
Card 1/3

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856

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B004/B060

Fig.1

Card 3/3

S/192/61/002/001/005/006
B107/B218

AUTHORS: Vdovenko, V. M., Stebunov, O. B., and Shcherbakov, V. A.

TITLE: Proton relaxation in aqueous solutions of diamagnetic salts

PERIODICAL: Zhurnal strukturnoy khimii, v. 2, no. 1, 1961, 64-65

TEXT: It is of special interest to study solutions of uranyl salts, which the authors have already previously described (Ref. 1: V. M. Vdovenko, V. A. Shcherbakov. Zh. strukt. khimii, $\underline{1}$, no. 1, 28, (1960)). Such a study is of importance not only to gather information on the nature of this ion and its hydrates but also with respect to another question the authors have been dealing with earlier. The method of the present work hardly differs from the one they have described in the first communication of this series. UO_4 was prepared by precipitating it in the cold with hydrogen peroxide from aqueous solutions of uranyl nitrite. After that, UO_4 was dissolved in the corresponding solution. By working with a certain excess of acid, hydrolysis was excluded (the pH of the solution was about 0). The concentration was controlled manganometrically. Only in the case of hydrochloric solutions, the

Card 1/5

Proton relaxation ....

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gravimetric method was applied. The experimental results are given in the Figure and in the Table The ratios τ_c^i/τ_c^0 were calculated by a method described in communication II. As may be seen from the Figure, the influence of the uranyl ion upon the time of proton relaxation $(1/T_1)$ depends on the nature of the anion This dependence is confirmed by the values of the molar relaxation shift ΔM, and above all, by the values for τ_c^i/τ_c^0 (Table). The latter values are about the same for hydrochloric and nitric solutions, but are much higher for perchloric and sulfuric solutions. The correlation between shift and ratio τ_c^i/τ_c^0 for the uranyl ion on one hand and the ionic radii on the other, is of special interest (cf. Table). The most important conclusion drawn by the authors is that the degree of covalence of the bond $U - OH_2$ does not remain constant, but depends on the nature of the anion in the solution. If one considers the anion capability of complex formation with uranyl then the explanation of the above effect as being due to the formation of covalent bonds ion-anion is rather unconvincing, especially, since the stability of the complexes increases in the order

$ClO_4^- < Cl^-$, $NO_3^- \ll SO_4^{2-}$ (Ref. 2. Sammelband "Aktiniden", Redaktion G. Seaborg

Card 2/5

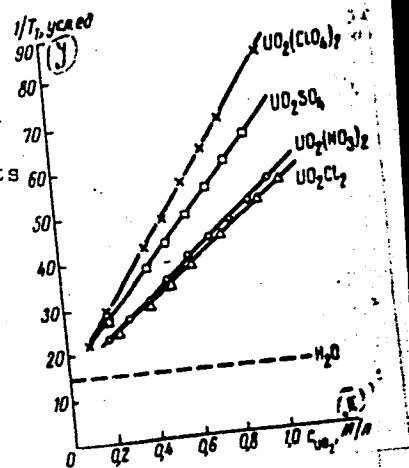S/192/61/002/001/005/006
B107/B218

Proton relaxation ....

tion from the original.]

ASSOCIATION: Radiyevyy institut AN SSSR im. V. G. Khlopina, Leningrad
(Radium Institute, AS USSR imeni V. G. Khlopin, Leningrad)

SUBMITTED: January 7, 1960

Figure: Change of the time of proton relaxation in
solutions of uranyl salts. The signal of a solution
of Mn^{2+} (concentration of $4.02 \cdot 10^{-4}$ M/l) is taken to
be 100.0. (x) c_{UO_2} in M/l (y) $1/T_1$, arbitrary units

Card 4/5

Proton relaxation ....   .

S/192/61/002/001/005/006
B107/B218

Legend to the Table: 1) salt; 2) $\Delta M(\pm 0.5)$, arbitrary units;
3) radius of the anion, A.

① Соль	② $\Delta_M (\pm 0.5)$, усл. ед.	③ Радиус аниона, A	τ_c^i / τ_c^0
$UO_2(ClO_4)_2$	68,0	2,36	42,2
$UO_2 SO_4$	56,0	2,06	34,5
$UO_2(NO_3)_2$	40,0	1,89	25,1
UO_2Cl_2	38,5	1,81	25,2

Card 5/5

STEBUT, Ivan Aleksandrovich, professor; MAYSURYAN, N.A., professor, doktor
sel'skokhozyaystvennykh nauk; KANTOROVICH, A.V., spetsredaktor;
GRIGOR'YEVA, A.I., redaktor; FEDOTOVA, A.F., tekhnicheskiy redaktor

[Selected work; in two volumes] Izbrannye sochineniia; v dvukh
tomakh. Moskva, Gos. izd-vo selkhoz. lit-ry. Vol.1. [Principles of
field crop cultivation] Osnovy polevoi kul'tury. 1956. 791 p.
        (Field crops)   (MLRA 9:11)
        (Fallowing)

Stec A.

Stec A., B. Sc.   "The Testing of Light Gas Fractions by the Podbielniak Method."
(Badanie lekkich feakcji gazowyck metoda Podbielniaka). Nafta, No 1-2, 1950, pp. 15-
19, 5 figs., 2 tabs.

The methods of qualitative and quantitative analysis of the composition of gas
by means of the Podbielniak apparatus on the basis of fractional distillation of
liquefied gas in a distillation flask. The apparatus can also be used to advantage
for the analysis of crude oil. Description of an apparatus of a previous design and
of the principles of operation. The tables attached to the article contain the
characteristic results of a series of analysesc6f samples of gas and crued oil taken
from various wells and from tanks.

SO: Polish Tecnical Abstracts No. 2, 1951

STEC, ANIELA

Propan i butan w polskich gazach ziemnych. Katowice, Panstwowe Wydawn. Techniczne, 1951. 1º p. (Prace Glownego Instytutu Naftowego, nr. 16)/Propane and butane in Polish natural gases. English, French, and Russian summaries. Bibl., diags., tables/

SO: Monthly List of East European Accessions, Vol. 3, No. 2, Library of Congress, Feb. 1954, Uncl.

STEC, A.

(1) Fuels

2657   622.324.5 : 621.643.2 : 542.2

Stec A. Apparatus for Sampling Gas under High Pressure.
„Aparat do pobierania próbek gazu pod wysokim ciśnieniem". Nafta.
No. 4, 1953, pp. 95—97, 2 figs.

Description of an apparatus for drawing samples of natural gas for
laboratory purposes from high-pressure boreholes and pipelines. This
apparatus, constructed at the Petroleum Institute, is adapted for direct
coupling to the gas source, and is, at the same time, intended for reduc-
ing the gas pressure to such a safe margin as would make possible the
charging of steel cylinders and aspirators. The article contains a tech-
nical specification of two alternative types of this apparatus — one for
charging aspirators and the other for charging cylinders, together with
a description of the principles on which they operate.

Polish Technical Abst.
No. 1   1954
Mining

STEC, Boleslaw, mgr inz.

    Diffusion tests in metals by marked atoms. Wiad hut 18
no.11:331-333 N '62.

STEC, Boleslaw, mgr inz.

Soft annealing of tool alloy steels for cold working. Hutnik
P 30 no.3:77-82 Mr '63.

ZALESKI, Stanislaw; STEC, Edward (Warszawa)

Studies on the pathogenesis of intoxications with colisepsis, sero-
logic type O 111: B₄. Rocz nauk roln wet 70 no.1/4:413 '60.
(REAI 10:9)

(COLITIS)

KRAUZE, Stanislaw; STEC, Edward; MLODECKI, Henryk

Application of the Triturus cristatus test for speedy determination
of carcinogenic properties of dyes. Roczn panstw zakl hig 14
no.1:31-38 '63.

1. Laboratory for Testing Food and Other Articles of Common
Consumption, State Institute of Hygiene, Warsaw.

KNOBLE, Stanislaw; STEC, Edward; KLOPECKI, Henryk

Application of the Triturus cristatus test for speedy determination of carcinogenic properties of dyes. Pt.2. Rocan panstw zakl hig 14 no.2:185-191 '63

1. Laboratory for Testing Food and Articles of Common Consumption, State Institute of Hygiene, Warsaw.

KRAUZE, Stanislaw; STEC, Edward; MLODECKI, Henryk

Application of the Triturus cristatus test for speedy determination
of carcinogenic properties of dyes. Pt. 3. Roczn panstw zakl
hig 14 no.6:537-539 '63.

1. Department of Testing Food and Articles of Common Consumption,
State Institute of Hygiene, Warsaw.

BARSZCZAK, Tadeusz; STEC, F.

Influence of soaking seeds in manganese sulfite on their vigor,
germinating power, and manganese content. Rocz nauk roln rosl
87 no.2:417-421 '63.

1. Zaklad Chemii Rolniczej, Szkola Glowna Gospodarstwa
Wiejskiego, Warszawa.

STEC, Jan, mgr., inz. (Tarnow); KORBIEL, Jozef (Tarnow)

> Szynwald - Zalasowa as a center for methodical improving
> breeding and production of bacon cattle. Gosp miesna 14
> no.4:12-16 Ap '62.

GWOZDZ, Emil; STEC, Leszek

A case of periarteritis nodosa diagnosed intra vitam. Polskie arch.med. wewnetrz. 29 no.11: 1541-1548 '59.

1. Z III Oddzialu Chorob Wewnetrznych Szpitala Miejskiego nr.4 w Katowicach. Ordynator: dr.med. E. Gwozdz.
(PERIARTERITIS NODOSA diag.)

STEC, Maria; MROZEK, Benadykt

    Glass house studies on fungicides. Postepy nauk roln 11 no.3:
    73-78 My-Je '64.

    1. Institute of Organic Industry, Pszczyna Branch.

STEC, Roman, mgr.inz.; PALKA, Lukasz, inz.

A new method of mixing the charge for agglomerating. Wiad hut 17 no.7/8:200-203 Jl-Ag '61.

ZIELINSKI, Stefan, mgr inz.; STEC, Roman, mgr inz.

Sintering of mixtures with a high percentage of dusty
materials. Wiad hut 18 no.12:365-370 D '62.

BYSTRZANOWSKA, Teofila; DOMANSKI, Remigiusz; STEC, Ryszard

A modified audiometer for children. Otolaryng. pol. 16 no.4:589-594
'62.

1. Z I Kliniki Laryngologii Studium Doskonalenia Lekarzy w AM w Warszawie
Kierownik: doc. dr med. T. Bystrzanowska.
(AUDIOMETRY)

STEC, TADEUSZ.

Sudety Zachodnie; przewodnik turystyczny. Warszaqa, Sport, i Turystyka,

1954 246 p. (The Western Sudetes; a tourist guidebook. illus., fold. map,

glossary, index.)

So. East European Accessions List Vol. 5, No. 1, Jan. 1956

STEC, Tadeusz (Krakow)

Visiting industrial enterprises with a notebook in hand.
Przegl mech 21 no.9/10:319-321. 10-25 My '62.

LEPLAWY, M.; STEC, W.

Introducing of a t-butyloxycarbonyl protective group into amino acid esters by means of t-butyl cyanoformate. Bul chim PAN 12 no. 1:21-24 '64.

1. Department of Organic Chemistry, Technical University, Lodz. Presented by O.Achmatowicz.

HALIKOWSKI, Boguslaw; PASZKOWSKA, Anna; STEC-KRYSZKIEWICZOWA, Krystyna

Cortisone therapy in late stages of primary tuberculous complex in children. Gruzlica 27 no.2:125-135 Feb 59.

1. Z Oddzialu Dzieciecego Instytutu Gruzlicy i Sanatorium Przeciwgruz-liczego w Otwocku Kierownik Naukowy: prof. dr Fr. Groer. Adres: Otwock, Sanatorium Przeciwgruzlicze dla Dzieci im. Marchlewskiego.
   (TUBERCULOSIS, PULMONARY, in inf. & child.
     primary complex, cortisone ther. in late stages (Pol))
   (CORTISONE, ther. use,
     tuberc., pulm. in child., late stages of primary complex
     (Pol))

KRUKOWSKA, Helena; JANISZEWSKA, Maria; STEC-KRYSZKIEWICZ, Krystyna;
    PEKSYK, Stanislaw

Bronchial changes in lymph node-pulmonary tuberculosis requiring
several bronchoscopies. Gruzlica 33 no.8:643-647 Ag ' 65.

1. Z Zespolu Problemowego Instyty Gruzlicy w Otwocku (Kierownik:
doc. dr. H. Krukowska) i z Sanatorium im. J. Marchlewskiego w
Otwocku (Dyrektor: dr. K. Stec-Kryszkiewicz).

STEC-KRYSZKIEWICZOWA, Krystyna; JANISZEWSKA-FRONCZAK, Maria; PEKSYK,
Stanislaw

Relation of segmental and lobar shadows to bronchial changes in
primary tuberculosis in children. Gruzlica 33 no.8:665-669 Ag '65.

1. Z Sanatorium im. J. Marchlewskiego w Otwocku (Dyrektor:
dr. K. Stec-Kryszkiewiczowa).

STECH, Arnost

        Handling of materials and the packing techniques. Doprava
        no.9:306-307 '62.

STECH, Oldrich

The new law on telecommunications. Cs spoje 9 no.4:3-4 Ag '64.

1. Central Administration of Telecommunications, Prague.

STECH, Svatopluk

Founding in the future. Slevarenstvi 10 no.1:39-40 Ja '62.

KLABAN, J.; STECH, S.

Information on founding. Slevarenstvi 10 no.9:359-362
S '62.

YURCHENKO, V.M.; STECHENKO, I.A.

Fibromyxoma of the atrium sinistrum freely hanging in the left ventricle. Vrach. delo no.9:152-1 S 3. (MIRA 16:10)

1. Tret'ya gorodskaya bol'nitsa g. Krivogo Roga.
(HEART—TUMORS)

Stec-Kulezycka; A.

897. **Condensates in gas wells.** A. Stec-Kulczycka. *Nafta* (Krakow), 1954. 18, 249-52.—The problem attempted by the Polish IP has been to explain the nature of the well-bottom condensates as well as the removal and sand which caved in at the bottom of the well. 12 wells were examined. Hydrocarbons as well as moisture were found. Well-bottom pressures in all cases are too low for all the heavier hydrocarbons to dissolve in the gaseous phase (Leverty), and retrograde condensation is at max. This is the first attempt at better understanding of this kind of well.   M. S.

STECHKIN, B.S.

Atlas detalei aviatsionnykh dvigatelei. Vyp. I. Moskva, 1927. 13 tables. (TSAGI. Trudy, no. 31)

Title tr.: Atlas of Aviation engine parts. Part I.

RPB (Microfilm)

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955

STECHKIN, B. S.

Theory of Air-breathing Reaction Engine. 1929.

Stalin Prize. Professor. Mrmber of the Academy of Sciences, USSR.
Chairman of the Scientific Commission on Aviation Terminology. Prom-
inent scientist and engine designer. Beveloper of the theory of internal
combustion engines. In 1929 developed the Foundation for the theory
of air-breathing jet engines, of bothe the compressorless and compressor
types, and is regarded as the founder of modern theory of such engines.

STECHKIN, B. S.

"Axial Compressors" VVIA im. N. Ye. Zhukovskiy. (1947)

STECHKIN, B.S.

ROMANENKO, P.N.; STECHKIN, B.S., chlen-korrespondent.

Theory of ejection and calculation of jet apparatus.   Izv.AN SSSR Otd.
tekh.nauk no.6:837-855 Je '53.   (MLRA 6:8)

1. Akademiya nauk SSSR.   (Jets)

STECHKIN, B.S.

USSR/ Scientists - Mechanical engineering

Card 1/1   : Pub. 128 - 34/38

Authors   : Stechkin, B. S.; Varshavskiy, I. L.; Velikanov, D. P.; Gol'd, B. V.;
                  Kuzel', R. V.; Petrov, V. A.; Fal'kevich, B. S.; and Khrvshchov, M. M.

Title   : Academician Evgeniy Alekseevich Chudakov, an outstanding scientist in
                  the field of Soviet mechanical engineering

Periodical   : Vest. mash. 9, 100-102, Sep 1954

Abstract   : A short biography is presented of the life-time activities and achieve-
                  ments of Evgeniy Alekseevich Chudakov in mechanical engineering. The
                  article was presented on the occasion of the first anniversay of his
                  death.

Institution : .....

Submitted   : .....

STECHKIN, B. (Acad.)
GENKIN, K.; Khmelnitskiy, A. (Masters of Tech Sci.)

"More Attention to Gas-Cylinder Vehicles"

Pravda, 5 July 1955

STECHKIN, B.S., akademik; KHRISTIANOVICH, S.A., akademik; otvetstvennyy red.;
    KLENNIKOV, V.M., red.izdatel'stva; PAVLOVSKIY, A.A., tekhn.red.

[Gas turbine installations; gas turbines] Gazoturbinnye ustanovki
(gazovye turbiny). Moskva, Izd-vo Akad.nauk SSSR, 1956. 33 p.
                                           (MIRA 10:12)
                (Gas turbines)

STECHKIN, B., Mil. Academy

"Titanium-Metal of Modern Technology," from the book Modern Military Technology, 1956, page 269.

Translation 1114585

STECHKIN, Boris Sergeyevich, akademik; KAZANDZHAN, Pogos Karapetovich;
ALEKSEYEV, Lev Petrovich; GOVOROV, Aleksandr Nikolayevich; NECHAYEV,
Yulian Nikolayevich; FEDOROV, Roman Mironovich; DMITRIYEVSKIY, V.I.;
professor, doktor tekhnicheskikh nauk, retsenzent; YEMIN, O.N.,
kandidat tekhnicheskikh nauk, redaktor; BOGOMOLOVA, M.F., izdatel'-
skiy redaktor; ZUDAKIN, I.M., tekhnicheskikh redaktor

[A theory of jet engines; turbomachines] Teoriia reaktivnykh dvigatelei;
lopatochnye mashiny. Pod red. B.S.Stechkina. Moskva, Gos. izd-vo obor.
promyshl., 1956. 548 p.   (MLRA 10:1)
        (Turbomachines)

STECHKIN, B.S., akademik, otvetstvennyy red.; STUL'NIKOV, N.P., starshiy
nauchnyy sotrudnik, kand.tekhn.nauk, red.; BLYUDOV, V.P., kand.
tekhn.nauk, red.; SHUVALOV, G.I., kand.tekhn.nauk, red.;
VESHNICHENKO, Ye.K., red.; GERASIMOVA, Ye.S., tekhn.red.

[Gas turbines: principal problems in constructing gas turbines.
A collection of articles. Translations] Gazovye turbiny; osnovnye
problemy gazoturbostroeniia. Sbornik statei. Moskva, Izd-vo
inostr. lit-ry, 1957. 230 p.   (MIRA 11:5)
      (Gas turbines)

STECHKIN, B.S., akademik; MIKHAYLOV, A.I., professor, doktor tekhnicheskikh
nauk; SVIRIDOV, Yu.B., kandidat tekhnicheskikh nauk.

On the occasion of the eightieth birthday of Nikolai Romanovich
Briling, corresponding member of the Academy of Sciences of the
U.S.S.R. Trudy Lab.dvig.   no.3:3-8   '57.   (MIRA 10:7)
                (Briling, Nikolai Romanovich, 1876-)

26(1,4)

Akademiya nauk SSSR. Laboratoriya dvigateley

Teoriya, konstruk'iya, raschet i ispytaniye dvigateley vnutren-
nego sgoraniya (Theory, Construction, Design, and Testing of
Internal Combustion Engines) Moscow, Izd-vo AN SSSR, 1957.
209 p. (Series: Its: Trudy, vyp. 3) Errata slip inserted.
4,000 copies printed.

Ed. of Publishing House: V. M. Klennikov; Tech. Ed.: A. A.
Pavlovskiy; Editorial Board: M. D. Apashev, Doctor of Tech-
nical Sciences, K. G. Yevgrafov, V. A. Lur'ye, Candidate of
Technical Sciences, and Yu. B. Sviridov, Candidate of Tech-
nical Sciences.

PURPOSE: This book is intended for technical personnel working
with internal combustion engines.

COVERAGE: This collection of scientific papers deals with inter-
nal combustion engines. The book is divided into three parts.
The first part deals with gas turbines, the second with recip-
rocating internal combustion engines, and the third with
methods and equipment for investigations. References follow each article.
No personalities are mentioned.

Apashev, M.D. Heat Capacity of Industrial Gases   65
The author discusses the dependence of heat capacities of
gases on temperature and pressure. On the basis of the prin-
ciples of theoretical thermodynamics he derives equations for
calculating correction values for heat capacities at high tem-
perature and pressure.

Sviridov, Yu.B. Effect of Combustion Process Parameters on the
Indicated Characteristics of an Engine   85
The author compares indicator diagrams and discusses theoret-
ical efficiencies of an actual cycle of diesel and spark-ignition
engines. He also presents a method for calculating combustion
losses and determining the most efficient spread of the combus-
tion process in a cycle.

Machinskiy, A.V. (Candidate of Technical Sciences). Some
Characteristics of Carburetor-engine Charging   108
In a theoretical investigation the author compares the charging
process of a carburetor engine with the charging process of an
engine of identical construction, differing only in that it
has a fuel-injection system.

Sharapov, K.A. Standardization of Automotive Engines Using
Different Types of Fuel   116
The purpose of this article is to establish bases for the
standardization of gasoline, diesel, and gas automotive
engines. Parameters of Soviet and non-Soviet automotive en-
gines are investigated.

Stechkin, B.S., and M.D. Apashev. A Method of Combined Investig-
ation of Flame Propagation and Pressure Change in a Spark-Ignition
Engine   155
The authors describe a method and the results of an experimen-
tal investigation of the variation of pressure and propagation
of the flame front in the engine cylinder during combustion.
The investigation was conducted at the Engine Laboratory of the
Academy of Sciences, USSR. The results show that at the mo-
ment of maximum pressure in the cylinder the complete charge
was ignited.

Sviridov, Yu.B. Thermodynamic Analysis of the Combustion Process
in a Spark-Ignition Engine   164
The author derives the thermodynamic equation of the dynamics
of combustion during propagation of the flame over the working
substance. He describes the temperature field in the combustion
chamber and its variation during the combustion process. He
also presents an analytical method and an example for calcu-
lating various parameters of the indicator diagram.

STECHKIN, B.S., akad.st.nauchn.sotrudnik, red.; STUL'NIKOV, N.P., kand.tekhn.
nauk.red.; BLYUDOV, kand.tekhn.nauk, red.; SHUVALOV, G.I., kand.tekhn.
nauk,red.; VINNICHENKO, Ye.K., red.; GRIBOVA, M.P., tekhn.red.

[Gas turbines; use of stationary and movable gas turbines in various
branches of industry; collection of articles] Gazovye turbiny:
ispol'zovanie statsionarnykh i peredvizhnykh gazotrubinnykh ustanovok
v razlichnykh otrasliakh promyshlennosti; sbornik statei. Moskva,
Izd-vo inostr. lit-ry, 1958. 173 p.   (MIRA 11:8)

1. Komissiya po gazovym turbinam AN SSSR, (for Stul'nikov, Blyudov,
Shuvalov.)
          (Gas turbines)

PHASE I BOOK EXPLOITATION   1111

Stechkin, Boris Sergeyevich, Kazandzhan, Pogos Karapetovich, Alekseyev, Lev Petrovich, Govorov, Aleksandr Nikolayevich, Konovalov, Nikolay Yefimovich, Nechayev, Yulian Nikolayevich, and Fedorov, Roman Mironovich

Teoriya reaktivnykh dvigateley; rabochiy protsess i kharakteristiki (Theory of Jet Engines; Operation and Characteristics) Moscow, Oborongiz, 1958. 533 p. 20,000 copies printed.

Ed.:(Title page): Stechkin, B.S., Academician; Ed. (Inside book): Yanovskiy, I.L., Engineer; Ed. of Publishing House: Bogomolova, M.F.; Tech. Ed.: Rozhin, V.P.; Managing Ed.: Sokolov, A.I., Engineer.

PURPOSE: This is a textbook approved by the Ministry of Higher Education of the USSR for students of aviation vuzes. The book may be also useful to engineers working in the field of aircraft engine construction.

COVERAGE: This book is an independent part of the general course in "Theory of Jet Engines." The first part of this series, "Bladed Machines", was published in 1956. In this book the authors describe in detail gas dynamics analysis, the testing methods, and the characteristics of a number of types of jet engines.

Card 1/11

They give the classification of the basic types of jet engines: turbo-jets, turbo-props, ram-jets, and liquid propellant rocket engines, and describe the special features of each. The description of each particular type contains the following information: a) the basic theory of operation, b) the methods of determination of test-stand and flight characteristics, c) information on special features in practical operation of the engine, d) methods for selecting basic design parameters, and e) the gas dynamics analysis of the engine in designing. In the compilation of this book the works of Stechkin, B.S., Kazandzhan, P.K., and others of the authors' collective were used, as well as the existing literature on bladed machines and jet engines. Individual chapters were written by the following authors: Ch. I and IV, by Govorov, A.N.; Ch. II and XV, by Alekseyev, L.P.; Ch. III and Sec. 7 of Ch. XVI, by Konovalov, N. Ye; Ch. V to IX, by Nekchayev, Yu. N.; Ch. X, XI, and Sec. 1-6 of Ch. XVI, by Fedorov, R.M.; and Ch. XII, XIV and Ch. XVII by Kazandshan, P.K. The authors express thanks to Professors Mel'kumov, T.M. and Kulagin, I.I., and also to Docent Zastel, Yu.K. for their valuable remarks and advice. There are 27 references, of which 25 are Soviet, including 2 translations, and 2 English.

Card 2/ 11

Name   : STECHKIN, B. S.

Title   : Academician

Remarks   : In an article entitled "Soviet Man's Dreams are Practical"
              Academician Stechkin writes that the year 1958 will witness another
              step on the road to the conquest of outer space and that man's flight
              into the unexplored reaches of the universe is no longer far off.

Source   : N: Sovetskaya Aviatsiya, No. 1, 1 January 1958, p. 3, col. 1

STECHKIN, B. S.

"Heat Production in the engine and its influence on the stroke"

report presented at the conference on Combustion and Formation of the Mixture in Diesel Engines, convened by the Motor Laboratory, Acad. Sci. USSR, Moscow 10-12 June 1958.
(Vest. Ak Nauk SSSR, 1958, No. 9, 115-117)

KONSTANTINOV, B.P.; DEBORIN, A.M., akademik; PEYVE, Ya.V.; IOFFE, A.F.,
akademik; MIKHAYLOV, A.I., prof.; SATPAYEV, K.I., akademik;
ZHUKOV, Ye.M., akademik; LAVRENT'YEV, M.A., akademik; SEMENOV, N.N.,
akademik; PAVLOVSKIY, Ye.N., akademik; MINTS, I.I., akademik;
SISAKYAN, N.M.; ROMASHKIN, P.S.; FEDOROV, Ye.K.; STECHKIN, B.S.,
akademik; MAYSKIY, I.M., akademik; PAVLOV, Todor, akademik;
ARBUZOV, A.Ye., akademik; VASIL'YEV, N.V., doktor ekon.nauk;
BELOUSOV, V.V.; MITIN, M.B., akademik; BLAGONRAVOV, A.A., akademik;
KANTOROVICH, L.V.; RYBAKOV, B.A., akademik; NEMCHINOV, V.S., akademik

Discussion of the address. Vest. AN SSSR 29 no.4:34-63 Ap '59.
                                                    (MIRA 12:5)

1.Chlen-korrespondent AN SSSR (for Konstantinov, Peyve, Sisakyan,
Romashkin, Fedorov, Belousov, Kantorovich).
                    (Science)

STECHKIN, Boris Sergeyevich, akademik; GENKIN, Konstantin Isayevich;
ZOLOTAREVSKIY, Vladimir Semenovich; SKORODINSKIY, Izrail'
Vol'fovich; GRIGOR'YEV, Ye.N., red.izd-va; RYLINA, Yu.V.,
tekhn.red.

[Indicator diagram, dynamics of heat generation, and operating
cycle of a high-speed piston engine] Indikatornaia diagramma,
dinamika teplovydeleniia i rabochii tsikl bystrokhodnogo porshne-
vogo dvigatelia. Moskva, Izd-vo Akad.nauk SSSR, 1960. 198 p.
(MIRA 14:2)

(Gas and oil engines)

STECHKIN, B.S., akademik, glavnyy red.; SVIRIDOV, Yu.B., zam.otv.red.;
APASHEV, M.D., red.; BRILING, N.R., red.; VASIL'YEV, B.N., red.;
VOINOV, A.N., red.; ZAGRYAZKIN, N.N., red.; GORSHKOV, G.B.,
red.izd-va; MAKAGONOVA, I.A., tekhn.red.

[Combustion and carburetion in diesel engines; proceedings of the
scientific and technical conference organized by the Engines
Laboratory in June 1958] Sgoranie i smesseobrazovanie v dizeliakh;
trudy nauchno-tekhnicheskoi konferentsii, provedennoi v iiune
1958 g. Laboratoriei dvigatelei. Moskva, 1960. 238 p.
                                                (MIRA 14:2)

1. Akademiya nauk SSSR. Laboratoriya dvigateley. 2. Chlen-
korrespondent AN SSSR (for Briling). 3. Laboratoriya dvigateley
Akademii nauk SSSR (for all, except Gorshkov, Makagonova).
                    (Diesel engines)

STECHKIN, B.S., adademik; PETROV, V.A., kand.tekhn.nauk

Criterion for evaluating thermal stresses and conditions for
modeling hydraulic transmissions with high energy stress. Trudy
Lab.dvig. no.5:23-26 '60.   (MIRA 14:3)
                    (Oil hydraulic machinery)

AUTHOR: Stechkin, B. S.

TITLE: On the efficiency of an ideal cycle of fast burning with a finite heat emission velocity

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 42. Silovyye ustanovki, no. 16, 1962, 44, abstract
               42 16.303 (Tr. Labor. dvigateley. AN SSSR, 1960, no. 5, 61–67)

TEXT   A general expression for the efficiency of an ideal cycle of an internal combustion engine is proposed.
An arbitrary law of heat emission is assumed. Methods are given for determining the most advantageous
ignition advance moment and for calculating the correction to the efficiency of an ideal cycle with v-const as
the function of the assumed heat emission law in a forced ignition engine. It is noted that such ideal cycles as
the Diesel cycle (p const) or the Sabate cycle have no meaning with the assumption that the heat emission law
is determined by the time or crankshaft rotation angle alone and is independent of the starting point of heat
emission.

[Abstracter's note: Complete translation.]

Card 1/1

CHUDAKOV, Yevgeniy Alekseyevich, akad.[deceased]; VELIKANOV,D.P., doktor
    tekhn.nauk,st.nauchn.sotr.,ctv.red.; STECHKIN,B.S., akad.,
    red.; BRILING,N.P., red.; ORLIN,A.S. doktor tekhn.
    nauk, red.; OSIPYAN,A.V., kand.tekhn.nauk,red.; VARSHAVSKIY,I.L.
    kand.tekhn.nauk,red.; PETROV,V.A., kand.tekhn.nauk,st.nauch.
    sotr.,red.: GOL'D,B.V., st.nauch.sotr.,red.; KLENNIKOV.V.M. red.
    izd-va;   SIMKINA,Ye.N., tekhn.red.

[Selected works] Izbrannye trudy. Moskva, Izd-vo Akad.nauk
SSSR. Vol.1. [Theory of motor vehicles] Teoriia avtomobilia.
1961. 482 p. Vol.2. 1961. 343 p.

                                   (MIRA 14:5)
1. Chlen-korrespondent AN SSSR (for Briling) 2. Laboratoriya
dvigatelei AN SSSR (for Velikanov, Gol'd, Petrov)
             (Motor vehicles--Dynamics)
         (Motor vehicles--Design and construction)

S/024/61/000/004/002/025
E191/E581

AUTHOR: Stechkin, B.S. (Moscow)

TITLE: On the efficiency of the ideal cycle with rapid combustion having a finite rate of heat formation

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1961, No.4, pp.5-10

TEXT: The effect of a finite rate of heat formation upon the efficiency of the ideal internal combustion engine cycle is considered as a correction upon the simple constant volume combustion formula. The rate of heat formation is stated in terms of a specially introduced coordinate, which is the square root of the volume increment from top dead centre. Near the t.d.c., this coordinate is proportional to the crank angle. A typical curve for the rate of heat formation is illustrated beginning with the point of ignition advance. An analysis of cycle efficiency is carried out to allow consideration of various factors in the law of heat formation upon the efficiency of the process, including the most favourable ignition advance. Two parameters are defined which entirely express the effect of the rate of heat formation on the cycle efficiency. One of these is

Card 1/2

STECHKIN, B.S. (Moskva); DUBINSKIY, M.G. (Moskva); SOKOLOV, K.K. (Moskva);
TSAO SYAO-TSZIN [TS'ao Hsiao-ching] (Moskva)

Radial flow equilibrium. Izv. AN SSSR. Otd. tekh. nauk. Energ. i
avtom. no.4:11-15 Jl-Ag '61.   (MIRA 14:9)
                    (Compressors) (Turbines)

S/024/61/000/004/004/025
E032/E314

AUTHORS: Stechkin, B.S. and Litvak, A.K. (Moscow)

TITLE: On the Flow of Viscous Gas in a Cooled Cylindrical
             Tube

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye
             tekhnicheskikh nauk, Energetika i avtomatika,
             1961, No.4, pp.16-19

TEXT: The flow of gas in a cylindrical tube, including
the effects of friction and cooling, has been investigated by
many workers during the last decade. However, the present
authors state that no sufficiently simple and accurate
solutions for technological application are as yet available.
The method put forward in the present paper can be used to
provide such solutions and consists of the following. Instead
of deriving an exact solution for a cylindrical channel, an
attempt is made to determine the exact solution for two
limiting cases, namely, a slightly contracting channel and
a slightly expanding channel. It is clear that the true

Card 1/8

On the Flow of ...

S/024/61/000/004/004/025
E032/E314

solution lies between these two limiting solutions and although
the exact solution cannot be determined, one might guess that
the error in the arithmetical average of the two solutions would
be less than one-half of the difference between the limiting
values. In mathematical terms the problem can be formulated
as follows. The basic equations for the one-dimensional
stationary flow of a viscous cooled gas in a cylindrical tube
are the continuity equation (Eq.1), the energy equation (Eq.2),
the Bernouilli equation (Eq.3), the equation of state (Eq.4)
and the fundamental equation of the hydrodynamic heat-transfer
theory (Eq.5):

Card 2/8

On the Flow of ....

S/024/61/000/004/004/025
E032/E314

p - static pressure;
Ω - channel perimeter;
x - channel length measured from the beginning of the tube,
α - emissivity;
T_c - wall temperature;
T - temperature of the stream;
γ - density;
$d_o = 4F/\Omega$;
ζ - impedance;
R - gas constant;
Nu - Nusselt criterion;
Pe - Pekle criterion;
$\delta G = F\gamma wd\zeta$ is the correction given by

Card 4/8

(6)

On the Flow of ....

S/024/61/000/004/004/025
E032/E314

$$F\gamma w = \text{const} \tag{1}$$

$$\Omega dx\alpha \, (T_c - T) \, d\tau = \delta Gc_p dT + \delta Gd \frac{w^2}{2g} A \tag{2}$$

$$-\frac{dp}{\gamma} = d \frac{w^2}{2g} + \frac{dx}{d_0} \zeta \frac{w^2}{2g} \tag{3}$$

$$p = \gamma RT \tag{4}$$

$$Nu = \frac{1}{8} \zeta Pe \, E, \quad \alpha = \frac{1}{8} \zeta c_p \gamma w E \tag{5}$$

In these equations the symbols have the following meaning:

G - mass transport,
F - cross-sectional area;
w - velocity;
γ - time;
c_p - specific heat at constant pressure;
A - thermal equivalent of mechanical energy;
g - acceleration due to gravity;

Card 3/8

On the Flow of ....

where w' is the velocity on the boundary of the laminar
        layer, and
      Pr - is the Prandtl criterion.
The ratio w'/w may be assumed to be approximately equal
to 1/3 and for diatomic gases E $\simeq$ 1.1 .   Eq. (1) yields

$$wpF/RT = const.$$

The first ˙exact solution is attained by considering the flow
not in a cylindrical tube but in a slightly expanding channel
in which pF = const., such that p drops by not more than
5%. Using the notation:

$$M_1^2 = w_1^2/kgRT_1$$

where the subscript 1 refers to the entrance to the tube
and $c_p - c_v$ = AR where $k = c_p/c_v$, it is found that
Card 5/8

On the Flow of ....

S/024/61/000/004/004/025
E052/E314

$$\frac{dT}{T - T_c} + \frac{(k-1) M_1^2}{T_1} \frac{T dT}{T - T_c} = -0.55\, \zeta \frac{dx}{d_0} \qquad (7)$$

$$\frac{dp}{p} \frac{1}{k M_1^2} \frac{2 T_1}{T} + 2 \frac{dT}{T} = -\zeta \frac{dx}{d_0} \qquad (8) .$$

It follows from these equations that

$$\frac{1}{k} \frac{dp}{p} \frac{1.1}{M_1^2} \frac{T_1}{T} + 1.1 \frac{dT}{T} = \frac{dT}{T - T_c} + \frac{(k-1) M_1^2}{T_1} \frac{T dT}{T - T_c} \qquad (9) .$$

This equation can be immediately integrated. The second
simple and exact solution corresponding to the case of a
slightly expanding channel is obtained by assuming that
w = const. In that case, the original equations (2) and
(3) are simplified and the pressure drop is given by:

Card 6/8

S/024/61/000/004/004/025
E032/E314

On the Flow of ....

(14)

$$\frac{dp}{p} = \frac{1}{1.1} \frac{w^2}{g} \frac{1}{RT} \frac{dT}{\delta T}$$

where

$$\delta T = T - T_c .$$

Using the substitution

$$M_c^2 = w^2/kgRT_c$$

it is found that

(15)

$$\frac{dp}{p} = \frac{kM_c^2}{1.1} dT \left(\frac{1}{T - T_c} - \frac{1}{T} \right)$$

which can be immediately integrated. The latter solution

Card 7/8

On the Flow of ....

S/024/61/000/004/004/025
E032/E314

gives an overestimate of the losses. It is particularly
convenient in technological applications since it can be
used to estimate with a known margin of error the hydraulic
losses at a given wall temperature, gas input and temperature
at the end of the tube.   There are 2 figures.

SUBMITTED: April 27, 1961

Card 8/8

ANDREYEV, B.V.; ARTEM'YEV, S.P.; ARKHANGEL'SKIY, V.M; AFANAS'YEV, L.L.;
BABKOV, V.F.; BRONSHTEYN, L.A.; BURKOV, M.S.; BURYANOV, V.A..;
VARSHAVSKIY, I.L.; VELIKANOV, D.P.; VOINOV, A.N.; VYRUBOV, D.N.;
DORMIDONTOV, A.V.; D'YACHKOV, A.K.; YEFREMOV, V.V.; ZHABIN, V.M.;
ZELENKOV, G.I.; KALABUKHOV, F.V.; KALISH, G.G.; KRAMARENKO, G.V.;
KRASIKOV, S.M.; LAKHTIN, Yu.M.; MIKULIN, A.A.; ORLIN, A.S.; OSTROVSKIY,
N.B.; OSTROVTSOV, A.N.; RUBETS, D.A.; STEPANOV, Yu.A.; STECHKIN, B.S.;
KHACHATUROV, A.A.; KHOVAKH, M.S.; CHAROMSKIY, A.D.; SHARAPOV, K.A.

Nikolai Romanovich Briling; obituary. Avt.transp. 39 no.4:57
Ap '61.   (Briling, Nikolai Romanovich, 1876-1961)   (MIRA 14:5)

20733

S/020/61/137/002/004/020

C111/C222

16.6100 (0150 1031)

AUTHORS;   Stechkin,B.S., Academician, and Stechkin,S.B.

TITLE: Mean square value and arithmetical mean

PERIODICAL: Akademii nauk SSSR. Doklady, vol.137, no.2, 1961, 287-290

TEXT: Let $y(x) \in L^2 [0,1]$. Let

$$\varphi_0(x) = y(x), \qquad y_0 = \int_0^1 |\varphi_0(x)| dx,$$

$$\varphi_k(x) = |\varphi_{k-1}(x)| - y_{k-1}, \qquad y_k = \int_0^1 |\varphi_k(x)| dx \qquad (k=1,2,\ldots).$$

The authors prove the formula

$$\int_0^1 y^2(x) dx = \sum_{k=0}^{\infty} y_k^2 = \sum_{k=0}^{\infty} \left\{ \int_0^1 |\varphi_k(x)| dx \right\}^2. \qquad (1)$$

The proof is based on
Lemma 1: Let $p > 0$, and on E, mes $E = c > 0$, let $|\varphi_p(x)| \geq M$. Then it holds

Card 1/2

Mean square value and arithmetical mean

$$K_p = \sum_{k=p}^{\infty} y_k \gtrless M_0 \qquad (5)$$

Lemma 2: Let $0 \le p \le n$ and $f_p = \max_{m \ge p} y_m$

1) If in x_0 $(0,1)$

$$|f_p(x_0)| \ge \sum_{k=p}^{n} y_k$$

then

$$|\varphi_{n+1}(x_0)| = |\varphi_p(x_0)| - \sum_{k=p}^{n} y_k.$$

2) If in $x_0 \in [0,1]$

$$|\varphi_p(x_0)| < \sum_{k=p}^{n} y_k$$

then

$$|\varphi_{n+1}(x_0)| \le \xi_p.$$

SUBMITTED: December 14, 1960

Card 2/2

L 18221-63   EPR/EWT(1)/BDS. AFFTC/ASD   Ps-4   WW
ACCESSION NR: AT3001866   S/2909/62/000/006/0138/0139

AUTHOR: Stechkin, B. S.

TITLE: Methodology for the calculation and measurements relative to the mixing of jets

SOURCE: AN SSSR. Institut dvigateley. Trudy, no. 6, 1962, 138-139

TOPIC TAGS: aerodynamics, fluid dynamics, hydrodynamics, jet, mixing, augmenter, pump, jet augmenter, Euler, Borda-Carnot, energy, loss, minimum

ABSTRACT: This theoretical paper deals with the mixing of two concentric jets of incompressible fluid and, hence, applies most directly to the theory of jet augmenters and jet-driven pumps. Its principal conclusion is that minimal energy losses in the mixing of two concentric jets is obtained when a constant pressure is maintained throughout the chamber. The author assumes that in the inlet cross section of the mixing chamber the inner jet has a velocity u_1 and the outer (annular) jet has a velocity w_1, whereas in the outlet section the completely mixed single jet has a uniform velocity w_2. Wall friction in the mixing chamber is disregarded, since the study is solely focused on the energy losses incurred in mixing. A general expression for the losses is obtained from the total-energy

Card 1/2

L 18221-63
ACCESSION NR: AT3001866

equation, from which the Eulerian momentum equation is subtracted after multi-
plication by w_2. Simple considerations issuing from the Borda-Carnot theorem,
which states that the kinetic-energy loss equals the kinetic energy of the lost and
acquired velocity of the mixed jet, lead to the conclusion that minimum loss occurs
when p=constant throughout the mixing chamber. Orig. art. has 1 figure   and
8 numbered equations.

ASSOCIATION: none

SUBMITTED: 00   DATE ACQ: 11Apr63   ENCL: 00

SUB CODE: AI, PR   NO REF SOV: 000   OTHER: 000

Card   2/2

STECHKIN, Boris Sergeyevich, akademik, Geroy Sotsialisticheskogo Truda

Experiment, the road to success. Kryl. rod. 15 no.8:15 Ag '64
(MIRA 18:1)

L 13917-66   EWT(d)/T/EWP(1)   IJP(c)

ACC NR: AT6000423   SOURCE CODE: UR/2517/65/078/000/0012/0023

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TITLE: Minimal extensions of linear functionals

SOURCE: AN SSSR. Matematicheskiy institut. Trudy, v. 78, 1965. Ekstremal'nyye polinomov (Extremum properties of polynomials), 12-23

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ABSTRACT: The authors study properties of minimal extensions of functions $f \in C_m^*$ (the conjugate space of linear functionals defined on C_m, the space of real trigonometric polynomials of order m) on C (the space of continuous periodic functions) and on $C_n (n > m)$. It is shown that for any $f \in C_m^*$ there is at least one canonical extension on C (i.e., a norm preserving one for which

$$f(t) = \int_0^{2\pi} t(x)\, d\sigma(x),$$ (1)

where σ is a step function with a finite number $N \le 2m$ of jumps). The extension cannot be improved. Necessary and sufficient conditions for uniqueness of such

Card 1/2

L 13917-66

ACC NR: AT6000423

extensions are given. These results are used to study approximation of trigonometric polynomials and to study certain extremal problems. Orig. art. has: 22 formulas.

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STECHKIN, S. B.

Ob absoljutnoy skhodimosti ortogonal'nykh ryadov. Uspekhi matem. nauk, 2:3 (19), (1947), 177-178.

SO: Mathematics in the USSR, 1917-1947
      edited by Kurosh, A. G.,
      Markushevich, A. I.,
      Rashevskiy, P. K.
      Moscow-Leningrad, 1948

Teoremy tauberova tipa. Uspekhi matem. hauk, 2:3 (19), (1947), 107-120.

SO: Mathematics in the USSR, 1917-1947
        edited by Kurosh, A. G.,
        Markushevich, A. I.,
        Rashevskiy, P. K.
     Moscow-Leningrad, 1948

STECHKIN, S. B.

Stečkin, S. B. - A generalization of some inequalities of S. N. Bernštein. Doklady Akad. Nauk SSSR (N.S.) 60, 1511–1514 (1948). (Russian)

Nikol'skiĭ, S. A generalization of an inequality of S. N. Bernštein. Doklady Akad. Nauk SSSR (N.S.) 60, 1507–1510 (1948). (Russian)

Bernštein, S. N. A generalization of an inequality of S. B. Stečkin to entire functions of finite degree. Doklady Akad. Nauk SSSR (N.S.) 60, 1487–1490 (1948). (Russian)

Let $t_n(x)$ be a trigonometric polynomial of degree n and $\Delta_\delta^r t_n(x) = \sum_{j=0}^r (-1)^{r-j} \binom{r}{j} t_n(x+j\delta)$. The first paper proves the inequality

(*) $|t_n^{(r)}(x)| \leqq (\tfrac{1}{2}n \csc \tfrac{1}{2}n\delta)^r \sup |\Delta_\delta^r t_n(x)|,$

$$0 < \delta < 2\pi/n.$$

The case $r = 1$ is deduced from the lemma that for $|\eta| \leqq \pi/n$ and $t_n(x_0) = L = \sup |t_n(x)|$, we have $t_n(x_0+\eta) \geqq L \cos n\eta$. The general case follows by induction on r. Similar extensions of classical theorems on ordinary polynomials are pointed out.

The second paper extends (*) to entire functions of exponential type n (no longer necessarily an integer) in the case $\delta = \pi/n$ and then to functions of more than one variable.

The third paper gives a different proof of (*) for $r = 1$ and entire functions of exponential type, and adds the inequality

(**) $|t_n(x+\delta) - t_n(x)| \leqq 2 \sin \tfrac{1}{2}n\delta \cdot \sup |t_n(x)|,$

$$0 < \delta < \pi/n.$$

The reviewer remarks that (*) and (**) for finite Fourier-Stieltjes integrals follow at once from a theorem of P. Civin [Duke Math. J. 8, 656–665 (1941); these Rev. 3, 108]. For the more general class of entire functions of exponential type they may then be deduced by a simple limiting process.

R. P. Boas, Jr. (Providence, R. I.).

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STECHKIN, S.β.

Stečkin, S. B. On the degree of best approximation to continuous functions. Doklady Akad. Nauk SSSR (N.S.) 65, 135–137 (1949). (Russian)

It is known that for the problems of best approximation of continuous functions $f(x)$ by polynomials the notion of the modulus of continuity $\omega(\delta, f) = \max_{x, |h| \leq \delta} |f(x+h) - f(x)|$ is insufficient, and that we have to consider the higher moduli

$$\omega_k(\delta, f) = \max_{x, |h| \leq \delta} \left| \sum_{i=0}^{k} (-1)^{k-i} \binom{k}{i} f(x+ih) \right|,$$

especially the case $k=2$ [see Zygmund, Duke Math. J. 12, 47–76 (1945); these Rev. 7, 60]. Let $\varphi(\delta)$ be a positive function defined for $0 < \delta \leq \pi$, tending to 0 with δ, non-decreasing but such that $\varphi(\delta)\delta^{-\alpha}$ is decreasing for some $\alpha > 0$ (the latter condition may be replaced by a weaker one). Let $\varphi(u) \sim \psi(u)$ mean that the ratio $\varphi(u)/\psi(u)$ is contained between two positive constants. The author states that if $f(x)$ is continuous and of period 2π, and if $E_n[f]$ is the best approximation of f by trigonometric polynomials of order n, then (*) $E_n[f] \sim \varphi(n^{-1})$ implies (‡) $\omega_k(\delta, f) \sim \varphi(\delta)$ for every $k > \alpha$; conversely, if (‡) is satisfied for some $k > \alpha$, then (*) holds.   A. Zygmund (Chicago, Ill.).

STECHKIN, S.B.   2

Steckin, S. B. On the problem of multipliers for trigo-
nometric polynomials. Doklady Akad. Nauk SSSR
(N.S.) 75, 165–168 (1950). (Russian)
Let us write $A_n \sim B_n$ if there exist two absolute constants
c_1 and c_2 such that $c_1 B_n \leqq A_n \leqq c_2 B_n$ for all n. Let

$$t_n(x) = \tfrac{1}{2}a_0 + \sum_1^\infty (a_k \cos kx + b_k \sin kx).$$

Suppose further that the sequence of real numbers $\{\lambda_k\}$ satis-
fies $\lambda_0 = 0$, $\Delta \lambda_k = \lambda_k - \lambda_{k-1} \geqq 0$ and $\Delta^2 \lambda_k = \lambda_k - 2\lambda_{k-1} + \lambda_{k-2} \leqq 0$
and consider the trigonometric polynomial

$$\bar{\tau}_n(x) = \bar{\tau}_n(x, t_n) = \sum_{k=1}^\infty \lambda_k(b_k \cos kx - a_k \sin kx).$$

The author shows among other things that

$$\bar{M}_n = \sup_{\|t_n\|\leqq 1} \|\bar{\tau}_n(t_n)\|,$$

where by $\|\varphi(x)\|$ we understand $\max_x |\varphi(x)|$, satisfies
$\bar{M}_n \sim \sum_1^n \lambda_k/k$. His results are related to those of Szegö [Schr.
Königsberg. Gel. Ges. 5, 59–80 (1928)] and Fejér [Acta
Univ. Szeged. Sect. Sci. Math. 2, 75–86 (1925)].
                              A. C. Offord (London).

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